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| **Unit 1**  ***Aug 20-Oct 12***  ***(42 days)*** | Order of Operations and Whole Numbers | | | *Vocabulary* | |
| [*Rationale, Strategies, Essential Questions, and* *Misconceptions*](http://lrsd5thgrade.wikispaces.com/file/view/UNIT+1+Standards%2C+Rationale%2C+and+Strategies.pdf/351331492/UNIT%201%20Standards%2C%20Rationale%2C%20and%20Strategies.pdf) | | | | |
| WORKSHOP MODEL OF INSTRUCTION | | | | | |
| **Warm Ups** |  | **WORKTIME Lessons** | |  | **CLOSURE Choices** |
| * Number Talks * Thinking Devices * Quick Estimation * Data/Line Plot Ideas * Dot Cards * Quick Flash | Unit 1 Part 1 5.OA.1 5.OA.2  Students take Pre-assessment for Unit 1  **Lesson 1**  [How Many Dots?](http://lrsd5thgrade.wikispaces.com/file/view/G3+Multiplication.pdf)  This third grade lesson is being recycled to focus on students' written equations and expressions. The representation for the solution for counting the dots must correspond with the written symbols and numerals students use to explain their strategy. Students must learn how to write and interpret symbols and numbers. (literacy in mathematics).  Student sheets and practice   * Problem 1 [Presentation](http://lrsd5thgrade.wikispaces.com/file/view/Prob+1+Presentation.pdf) for lesson (for Smartboard) [Student Worksheet](http://lrsd5thgrade.wikispaces.com/file/view/Prob+1+Worksheet.pdf)  [Solutions](http://lrsd5thgrade.wikispaces.com/file/view/Prob+1+Solutions.pdf) * Problem 2 [Presentation](http://lrsd5thgrade.wikispaces.com/file/view/Prob+2+Presentation.pdf) for lesson (for Smartboard) [Student Worksheet](http://lrsd5thgrade.wikispaces.com/file/view/Prob+2+Worksheet.pdf)  [Solutions](http://lrsd5thgrade.wikispaces.com/file/view/Prob+2+Solutions.pdf) * **Lesson 2**   **Introduction to order of operations: focus on WHY you have to multiply first**  <http://www.eduplace.com/math/mathsteps/4/a/4.orderop.tips.html>  **Lesson 3**  **Non-routine Problem-solving sets**  Students solve non-routine problems requiring an equation with 2 operations. Students must correctly write the equation to match the solution.   * Differentiate instruction through numbers or complexity of problem. Other number pairs for problems are given. * FOCUS: writing an accurate equation for the solution…is there more than one way to write it?   **Leveled Problem:**  One year Maria and Sonia send greeting cards. Altogether they send 25 cards. Maria sends 7 more cards than Sonia. How many cards does each girl send?  *Other number choices*: (80, 10) (96, 6) (150, 16) (385, 101)  **Lesson 5**  **Analyzing equations to determine if the structure of the written equation matches the situation**   * “Everything Balances Out in the End” • lesson 2 in the series • click on website below <http://illuminations.nctm.org/LessonDetail.aspx?ID=L643> * [Pan Balance - Numbers Applet](http://illuminations.nctm.org/ActivityDetail.aspx?id=26). Good for SMARTboard or computer lab * Student Sheets [Who is correct?](http://illuminations.nctm.org/Lessons/EveryBalance/Balance-OVH-WhoIsCorrect.pdf) [Discover Oops](http://illuminations.nctm.org/Lessons/EveryBalance/Balance-OVH-DiscoverOoOPS.pdf)   **Lessons 6-9**  **Form and solve simple linear equations.**  This resource is divided into 4 sessions. These lessons help students understand how to generate and write expressions and equations accurately both in words and numbers and symbols in a fun and challenging way.  Session 1 and 2 – [Target 12 and Target 24](http://lrsd5thgrade.wikispaces.com/file/view/Target+12+and+24.pdf)  Session 3 and 4 – [Four Fours Challenge](http://lrsd5thgrade.wikispaces.com/file/view/Four+fours+challenge.pdf)  **Lesson 10**  [//“//Pick a Number,”](http://lrsd5thgrade.wikispaces.com/file/view/Pick+a+Number.pdf) *Lessons for Algebraic Thinking*, *Grades 3-5,* pp. 139-150 (writing equations, properties, inverse operations) one day for intro; more days for extensions.  **This lesson gives students experience with solving equations. Students each pick a number between zero and twenty-five and use it with the following directions: Multiply the number by two and then add seven. Students present their result and the others figure out what their starting number was and explain their strategies. They practice with others and write their own. Full lesson is scripted in the link.**  **Lesson 11**  **Creating a treasure map with order of operations.**Students generate equations for a given value. <http://www.uen.org/Lessonplan/preview.cgi?LPid=21529>  **Lesson 12**  **More practice playing with numbers and operations to make true statements. Students**  Number Juggle 1  Number Juggle 2  Number Juggle 3  Number Juggle 4 (in your back pocket)  **Lesson 13**  **Menu/Game Day Students work in small groups to engage in more practice of concepts. Prescribe based on needs of students. Pull back small groups for intensive work.**  Possible Choices**:**  Games: **Four Fours Challenge or Target 24**) • More practice with **grouping dots and writing expressions** to match ([million dot student worksheet](http://lrsd5thgrade.wikispaces.com/file/detail/MillionDotDisplay.pdf)) • Extensions from **Pick a Number**(see original lesson) • Non-routine **Problem-solving** – give similar problem as in lesson 3- Problem: Troy and Suzy are collecting trading cards. Together they have 64 cards. Troy has 6 more cards that Suzy. How many cards does each have? • **Number Juggle 5**  **Interim Assessment**  Students take 10 question interim assessment. Implement using the workshop model. Students work individually. Grade assessment the same day, in class, to give immediate feedback. Students justify and defend their solutions.  **Lessons 14-15**  **Interpreting a growing pattern; writing the corresponding expression; interpreting multiplicative situation without always finding the total (more of 5.0A.2 – deeper)**  The patterns in this visual model help to focus on the concept of interpreting the magnitude or scaling of a figure using color tile arrangements that emphasize the growing multiplicative situation. Students represent the pattern using tables and equations. This lesson will be revisited in Unit 4 and at that time the graphing piece will be introduced.  [Piles of Tiles](http://lrsd5thgrade.wikispaces.com/file/view/Piles+of+Tiles.pdf)  **Lesson 16**  **In this problem-solving activity, students must use multiple operations and numbers to complete Magic Square or in this case, Hives.**  Focus on the strategies students use to use all the numbers.  Student worksheets: Hive Jive Sheets 1-3 (graduate in level of difficulty)  Unit 1, Part 2  5.NBT.5 5.NBT.6  **Lesson 17**  **Area model understanding of 2-digit x 1 digit and 2-digit x 2 digit multiplication problems ∙ Use rectangular multiplication tool for warm-up (see warm-ups for link).**  Focus on structure of the distributive property. How do the operations work? See the lesson for more questions and tips. Students will need lots of practice and discussion to make sense of the partial products and to be able to explain why the standard algorithm works every time.  [http://illuminations.nctm.org/LessonDetail.aspx?id=L858](file:///C:\Users\elizabeth.clifford\Dropbox\Public\2012%20curriculum%20maps\%0Dhttp:\illuminations.nctm.org\LessonDetail.aspx?id=L858) (see lesson first)  Student Worksheets [2 digit x 1 digit worksheet](http://illuminations.nctm.org/Lessons/MultConq/MultConq-AS-2x1.pdf) [2 digit x 2 digit worksheet](http://illuminations.nctm.org/Lessons/MultConq/MultConq-AS-2x2.pdf)  **Lesson 18**  **Students will work with area problems.**  [The distributive property and multiplication](http://lrsd5thgrade.wikispaces.com/file/view/Distributive+Property+with+Base+10+Blocks.doc)  **Lesson 19**  **Students continue to work with area problems** Focus on place value, the distributive property to deepen understanding of the structure of multiplication with 2 digit numbers using the area model (base 10 blocks and/or graph paper)  **PROBLEM**  A dog pen in the shape of a rectangle is to be built so  that the width is 38 feet and the length is 62 feet.  What is the area of the dog pen?  Other number choices: (30, 60) (25, 75)  **Lessons 20-21**  **Graph Paper Arrays – Commutative Property and Doubling; Focus on structure**  Mental math lesson – Students first work problems out mentally – whole class; students share out and explain their reasoning. Students will cut out graph paper to explain the relationships between expressions – How does knowing 3 x 8 help me compute 16 x 3? Have students begin with another problem, for example 2 x 7. They create the same relationships to explain the doubling strategy. Students create graph paper arrays to explain.  1. 3 x 8  2. 16 x 3  3. 6 x 16  4. 16 x 12  5. 6 x 32  6. 64 x 3  7. 6 x 64  **Lesson 22**  **Introductory Problems for Division – Students devise strategies to determine solutions. Focus on the structure of the problems and what to do with the remainder. How are the problems the same? How are they different? Why?**  [Juice Problems](http://lrsd5thgrade.wikispaces.com/file/detail/DivisionJuiceProblems.pdf)  **Lesson 23**  **Students revisit the division situations and look again at structure and the use of the remainder based on context of the problem.**  [Division Situations](http://lrsd5thgrade.wikispaces.com/file/detail/DivisionSituations.pdf)  **Lesson 24-26**  ***INVESTIGATIONS: BUILDING ON NUMBERS YOU KNOW***  Investigation 3, Sessions 4-6, pp. 83-88 ([Division Clusters](http://www.lrsd.org/files/edservices/5xmDivisionClusters.pdf))  [Student Sheet 1](http://lrsd5thgrade.wikispaces.com/file/view/HowDidISolveIt.mult.div.pdf) (cut the problems apart so students can focus on one set at a time)  [Student Sheet 2](http://lrsd5thgrade.wikispaces.com/file/view/MultiplicationDivisionClusterProblems.pdf) (using multiplication to think about division)  **Lesson 27**  **Games/Menu Tasks – Continue games and activities for practices on concepts; work with small groups**  Choices: [Counting Up From 10,000](http://lrsd5thgrade.wikispaces.com/file/detail/CountingUpFrom10%2C000.pdf) (new) • Game -Target 24 • More practice with grouping dots and writing expressions to match ([million dot student worksheet](http://lrsd5thgrade.wikispaces.com/file/detail/MillionDotDisplay.pdf)) • Extensions from Pick a Number(see original lesson)• Hive Jives 4 and 5  **Lesson 28**  **Non-routine Problem Solving – focus on the properties and operations used in student strategies**  Mary said the product of three numbers is 400 and their sum is 23. What are the three numbers? Other number choices: (72, 17) (6782, 57)  Extension: Students create their own problem to give to others  **Lesson 29**  **More practice with related problems**  [How Did I Solve It](http://lrsd5thgrade.wikispaces.com/file/view/HowDidISolveIt.mult.div.pdf)  **Lesson 30**  **Students practice writing contextual problems to go with 2 operation equations.**  **Great formative assessment**  Example: (5 x 20) + 2 Created context: James had in his wallet 5 twenty dollar bills plus 2 one dollar bills for a total of 102 dollars.  Other possible equations:  (4 x 90) - 60  6 + 4 x 8  (10 + 5 ) x (5 + 6)  **Lessons 31 +**  Choose more lesson extensions, games, and practice to solidify students understanding of these 5 standards. During this last week or two, prescribe to students practice based on their areas of need. There is a bank of problems in the box below. Pull back small groups for more intense work/intervention with identified students. Whole group discussions with students explaining and justifying their thinking is critical.  **Assessment** | | Closure options   Gallery walk   Student Discussion  •Open-ended Questions   Unit Question Bank   Talk Moves  •Journal Prompts   Unit Journal Prompt Suggestions  •Exit Ticket Ideas   ‘Say Why’   Estimation task |
| ASSESSMENT | | Science Lessons | INTERVENTIONS | HOMEWORK IDEAS | |
| Formative-NBT | |  | * [More Non-Routine Word Problems](http://lrsd5thgrade.wikispaces.com/file/view/word+problems+unit+1.pdf) |  | |